NYCTERIDOESTRONGYLUS UNCICOLLIS BAYLIS, 1930
(NEMATODA : TRICHOSTRONGYLOIDEA)
from Miniopterus australis witkampi (Megachiroptera)
from Sabah, East Malaysia

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SUMMARY. Nycteridostrongylus uncicollis Baylis, 1930 recovered from four of twelve Miniopterus australis witkampi Dobson (Megachiroptera) in Sabah, East Malaysia is redescribed. This is the first report of this parasite in Borneo of which Sabah forms the northeastern portion.

Nycteridostrongylus uncicollis Baylis, 1930 (Nematoda, Trichostrongyloidea), parasite de Miniopterus australis witkampi (Mégachiroptère) à Sabah (Malaisie orientale).

RÉSUMÉ. Nycteridostrongylus uncicollis Baylis, 1930 parasite chez quatre sur douze Miniopterus australis witkampi Dobson (Megachiroptera) à Sabah (Bornéo), Malaisie Est est redécrit. C'est la première fois que ce parasite est signalé à Bornéo.

Introduction

Baylis (1930) described Nycteridostrongylus uncicollis from bats (Miniopterus sp.) in Australia. This parasite was subsequently reported from Miniopterus fuliginosus in Vietnam (Meszaros, 1973) and Miniopterus schreibersi blepholis (Temminck) in Australia (Thomas, 1959). In the present study, nematodes recovered from Miniopterus australis witkampi Dobson (Megachiroptera) in Sabah, East Malaysia were identified as N. uncicollis after comparing them with the syntypes. N. uncicollis is the type species of the genus and it is imperative that its morphologic characters be fully understood. Unfortunately, the original description was incomplete; for example, the spicules and gubernaculum were not described. A redescription is provided based on the new material collected from Sabah, East Malaysia.

Methods and materials

Seven species of bats belonging to four genera were collected in the Gomantong Caves, Sabah, East Malaysia (5 33'N, 118 6'E). They included Hipposideros diadema

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masoni (Dobson) (N = 5), H. cervinus labuanensis (Tomes) (25), Miniopterus australis witkampi Dobson (12), M. magnater macrodens Maeda (1), Rhinolophus philippinensis sanborni Chasen (4), R. c. creaghi Thomas (27) and Tadarida (Chaerophon) p. plicata (Buchannan) 22). They were collected on 20, 21 and 29 June, 1984.

Syntypes of *N. uncicollis* were borrowed from the British Museum (Natural History), London through the kind cooperation of Dr. D. I. Gibson.

**Results**

*Nycteridostrongylus uncicollis* Baylis, 1930 (*fig. 1-13*).

**General**: Trichostrongyloidea; Molinidae, Molineinae. Anterior region with prominent ventral curve. Oral opening triangular. Prominent dorsal oesophageal tooth present. Six externo-lateral and four cephalic papillae present. Amphids, small. Cuticular cephalic vesicle prominent. Cuticular flange present on ventral side of anterior region. Flange transversely striated and widest at its posterior end, originating immediately anterior to excretory pore and extending beyond esophageal-intestinal junction. Synlophe with numerous ridges with prominent transverse striations. Ridges beginning immediately behind cephalic vesicle of both sexes. In male, ridges extending obliquely along greater part of body and then extending longitudinally for last 500 μm of body their numbers increasing from fifteen near excretory pore to eighteen at mid-body. In female, ridges extending obliquely along entire body length their numbers increasing from eleven near excretory pore to twenty at mid-body.

**Male** (2 specimens): Total length 5.1, 5.4 mm. Maximum width 140, 160 μm. Cephalic vesicle 55, 39 μm long. Cuticular flange 700, 500 μm long. Nerve ring 150, 130 μm, excretory pore 170, 115 μm and deirids 180, 128 μm from anterior end. Esophagus 350, 380 μm long. Spicules equal and 490, 610 μm long. Gubernaculum with distal lateral expansion and pointed tip, 132, 155 μm long. Bursal ray 1, small. Ray 2,3 have same origin and extend to edge of bursa. Ray 4 long and thin. Ray 5,6 have same origin and slightly curved. Ray 7 small and located at base of genital cone. Ray 8, curved and tip slightly constricted. Ray 9, 10 have same origin and located at dorsal lobe of bursa. Ray 10 of left side with small process at its base. Genital cone well developed.

**Female** (7 specimens): Total length 6.3-7.9 mm. Maximum width at midbody 180-210 μm. Cephalic vesicle 48-65 μm long. Cuticular flange 710-1 090 μm long. Nerve

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*Fig. 1.* — *En face* view. *Fig. 2.* — Cross-section near excretory pore, female. *Fig. 3.* — Gubernaculum, dorsal view. *Fig. 4.* — Bursa, ventral view. *Fig. 5.* — Anterior end, lateral view. *Fig. 6.* — Cross-section near mid-body, female. *Fig. 7.* — Bursa, ventral view. *Fig. 8.* — Anterior region, lateral view. *Fig. 10.* — Ovejector, lateral view. *Fig. 11.* — Tip of female tail, ventral view. *Fig. 12.* — Female tail, lateral view.
Fig. 1 à 13. — Nycteridostrongylus uncicollis Baylis, 1930.
ring 154-195 μm, excretory pore 133-210 μm and deirids 155-200 μm from anterior extremity. Esophagus 335-440 μm long. Vulva slightly inflated and 4.3-6.0 mm from anterior end. Vagina vera 122-145 μm long. Anterior vestibule 125-145 μm, sphincter 40-50 μm and infundibulum 24-40 μm long. Posterior vestibule 50-75 μm, sphincter 38-45 μm and infundibulum 35-40 μm long. Tail 65-80 μm long with a median spine and two dorsal, two subventral and one ventral tubercles of varied sizes. Phasmids not observed. Eggs 56(54-59) x 86 (82-89) μm (N = 10).

Host: Miniopterus australis witkampi Dobson
Prevalence: 33 % (4/12)
Intensity: 2.4 (1-4)
Location: Intestine
Locality: Gomantong Caves, Sabah, East Malaysia

Discussion

In the original description of N. uncicollis, Baylis (1930) reported that the cuticular flange at the anterior region was divided into four sections. This is probably an artifact due to poor fixation since all the specimens examined in the present study possessed smooth and uninterrupted flanges (fig. 11). The bursal rays of both males in this study were identical to those in the original description except for the tenth ray of the left side. This particular ray has a small process at its base which was not indicated in the original description. Finally, the morphology of the spicules and gubernaculum are described for the first time in this study. It is noted that oblique cuticular ridges extend the entire length of the body (cf. Durette-Desset, 1983).

Nycteridostrongylus uncicollis is apparently restricted to bats of the genus Miniopterus and its geographic distribution appears confined to South East Asia and Australia (Baylis, 1930, Thomas, 1959, Meszaros, 1973 and present study).

The only other species in the genus Nycteridostrongylus is N. petersi Durette-Desset and Chabaud, 1975 found in tree-shrews (Tupaia aglis (Diard) and T. tana Raffles) in Sabah. Betterton’s (1979) report of Nycteridostrongylus sp. in T. glis in West Malaysia likely refers to this species.

Nycteridostrongylus petersi is readily distinguished from N. uncicollis because it lacks an oesophageal tooth and a ventral cuticular flange. These characters were used by Durette-Desset and Chabaud (1975) to create a special subgenus (Petiellus) for N. petersi.

Besides N. uncicollis, Miniopterus spp. in Asia also harbour two additional trichostrongyle species. Molinostrongylus alatus (Ortlepp, 1932) was found in M. schreibersi in Taiwan by Myers and Kunts (1964). Molinostrongylus rhinolophi Yamaguti, 1941 and Strongylacantha rhinolophi Yamaguti, 1935 were reported from M. schreibersi in Japan by Kagei and Sawada (1977).
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